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LC3B (Cleaved) Antibody
Rabbit Polyclonal Antibody
Catalog # ABV11460

Specification

LC3B (Cleaved) Antibody - Product Information

Application	**IF**
Primary Accession	Q9GZQ8
Reactivity	**Human, Mouse, Bovine**
Host	**Rabbit**
Clonality	**Polyclonal**
Isotype	**Rabbit Ig**
Calculated MW	**14688**

LC3B (Cleaved) Antibody - Additional Information

Gene ID 81631

Positive Control	**ICC: U251 cells, IF: SY5Y cells**
Application & Usage	**IF: 1:10-50, ICC: 1:10-50.**

Other Names
MAP1LC3B; MAP1ALC3; Microtubule-associated proteins 1A/1B light chain 3B; Autophagy-related protein LC3 B; Autophagy-related ubiquitin-like modifier LC3 B; MAP1 light chain 3-like protein 2; MAP1A/MAP1B light chain 3 B; Microtubule-associated protein 1 light chain 3 beta.

Target/Specificity
LC3

Antibody Form
Liquid

Appearance
Colorless liquid

Formulation
Supplied in PBS with 0.09% (W/V) sodium azide.

Handling
The antibody solution should be gently mixed before use.

Reconstitution & Storage
-20 °C

Background Descriptions

Precautions
LC3B (Cleaved) Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

LC3B (Cleaved) Antibody - Protein Information

Name MAP1LC3B (HGNC:13352)

Synonyms MAP1ALC3

Function
Ubiquitin-like modifier involved in formation of autophagosomal vacuoles (autophagosomes) (PubMed:20418806, PubMed:23209295, PubMed:28017329). Plays a role in mitophagy which contributes to regulate mitochondrial quantity and quality by eliminating the mitochondria to a basal level to fulfill cellular energy requirements and preventing excess ROS production (PubMed:23209295, PubMed:28017329). In response to cellular stress and upon mitochondria fission, binds C-18 ceramides and anchors autophagolysosomes to outer mitochondrial membranes to eliminate damaged mitochondria (PubMed:22922758). While LC3s are involved in elongation of the phagophore membrane, the GABARAP/GATE-16 subfamily is essential for a later stage in autophagosome maturation (PubMed:20418806, PubMed:23209295, PubMed:28017329). Promotes primary ciliogenesis by removing OFD1 from centriolar satellites via the autophagic pathway (PubMed:24089205). Through its interaction with the reticulophagy receptor TEX264, participates in the remodeling of subdomains of the endoplasmic reticulum into autophagosomes upon nutrient stress, which then fuse with lysosomes for endoplasmic reticulum turnover (PubMed:31006537, PubMed:31006538). Upon nutrient stress, directly recruits cofactor JMY to the phagophore membrane surfaces and promotes JMY's actin nucleation activity and autophagosome biogenesis during autophagy (PubMed:30420355).

Cellular Location
Cytoplasmic vesicle, autophagosome membrane; Lipid-anchor Endomembrane system; Lipid-anchor Mitochondrion membrane; Lipid-anchor. Cytoplasm, cytoskeleton {ECO:0000250|UniProtKB:Q9CQV6}. Cytoplasmic vesicle. Note=LC3-II binds to the autophagic membranes. LC3-II localizes with the mitochondrial inner membrane during Parkin-mediated mitophagy (PubMed:28017329). Localizes also to discrete punctae along the ciliary axoneme

Tissue Location
Most abundant in heart, brain, skeletal muscle and testis. Little expression observed in liver

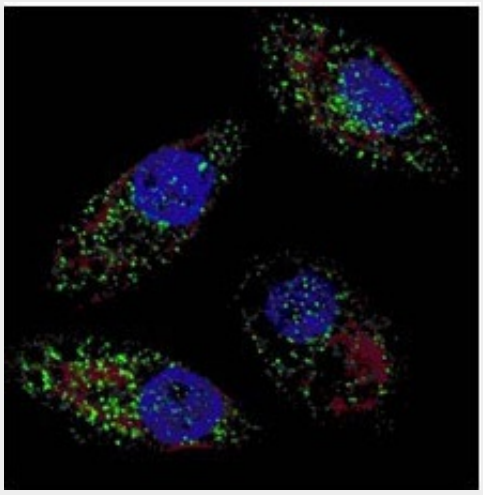
LC3B (Cleaved) Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

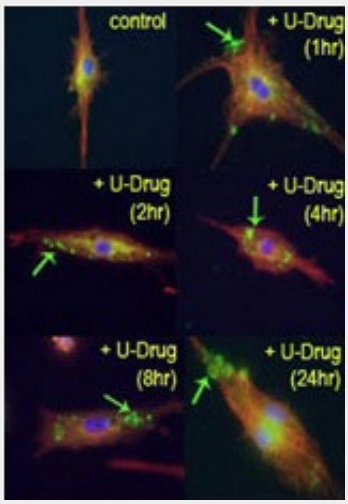
- Western Blot
- Blocking Peptides
- Dot Blot
- Immunohistochemistry

- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- Cell Culture

LC3B (Cleaved) Antibody - Images

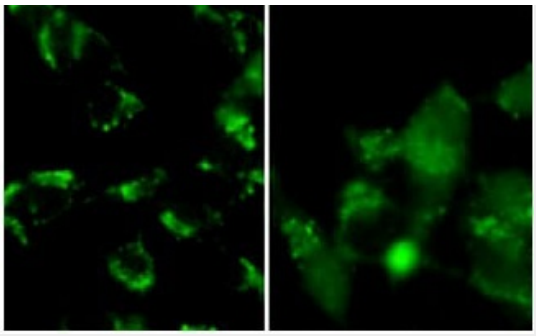


Fluorescent image of U251 cells stained with cleaved LC3B antibody. U251 cells were treated with Chloroquine (50 µM,16h), then fixed with 4% PFA (20 min), permeabilized with Triton X-100 (0.2%, 30 min). Cells were then incubated with cleaved LC3B primary antibody (1:100, 2 h at room temperature). For secondary antibody, Alexa Fluor® 488 conjugated donkey anti-rabbit antibody (green) was used (1:1000, 1h). Nuclei were counterstained with Hoechst 33342 (blue) (10 µg/ml, 5 min). LC3 immunoreactivity is localized to autophagic vacuoles in the cytoplasm of U251 cells.



Time course study of mouse leukaemic monocyte macrophage cells treated with U18666A, a drug that causes cholesterol and lipid storage in cells, thereby blocking fusion between late endosomes and lysosomes. Cleaved-LC3 (APG8b) antibody detected punctuates staining indicative of autophagic vacuole or phagosome structures. Data courtesy of Dr. Barry Boland, Department of Pharmacology, Oxford University.

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SY5Y cells were pretreated with 5nM bafilomycin for 24hr and fixed in methanol (left panel) or 4% of paraformaldehyde (right panel). Treatment with LC3B antibody at dilution 1:100. Data courtesy of Jianhui Zhu, MD, PhD & Charleen T. Chu, MD, PhD, University of Pittsburgh School of Medicine.

LC3B (Cleaved) Antibody - Background

Autophagy is an alternative process of proteasomal degradation for some long-lived proteins or organelles. Alterations in the autophagic-lysosomal compartment have been linked to neuronal death in many neurodegenerative disorders as well as in transmissible neuronal pathologies (prion diseases). Genetic studies in yeast have shown that Autophagy-defective Gene-8 (Atg-8) represents a specific marker for autophagy. Among the four families of mammalian Atg8-related proteins only LC3 (Microtubule-associated Protein1 Light Chain 3) is expressed at sufficient high levels and efficiently recruited to autophagic vesicles in cells and tissues. During autophagy the cytoplasmic form, LC3-I is processed and recruited to autophagosomes, where LC3-II is generated by site specific proteolysis near to the C-terminus. Autophagic vacuoles have been also reported frequently in cardiomyopathies or muscle cells exposed to different experimental settings.